British Columbia Mines & Mineral Exploration Overview 2004

Ministry of Energy and Mines - Information Circular 2005-1

BRITISH COLUMBIA

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BRITISH COLUMBIA MINING AND MINERAL EXPLORATION OVERVIEW 2004

Ministry of Energy and Mines

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INTRODUCTION

British Columbia's mineral resources are strategically located to play a role in the international mining industry, particularly for North American and Asian markets. The province has a well-defined potential for a wide variety of minerals and deposit types. The geoscience database is extensive and easily accessed and the provincial government is committed to aggressively improving that data and encouraging new developments. With attractive energy costs, a well-developed, all-weather highway system, rail links and a number of deep-water ports, British Columbia has the infrastructure to get coal, minerals and resulting products to markets.

Mining is a strong component of the British Columbia economy with 7 metal mines and 9 coal mines, approximately 27 industrial minerals quarries and mines, numerous placer mines and more than 1100 aggregate pits in operation. The **Willow Creek** and **Dillon** (Burnt River project) coal mines opened in the northeast and the **Gibraltar** copper-molybdenum mine re-opened in late 2004. A number of other mine development projects are underway and new mines are expected to open in 2005.

During 2004, British Columbia experienced a significant upturn in minerals-related exploration activity which will impact mining developments in the province for years to come. Commodity prices for nearly all metals and types of coal rose substantially over the year, led particularly by gold, copper, molybdenum and coking coal. For example, gold reached a 16-year high of over US$450 per ounce in early December. Mineral exploration expenditures increased to their highest level since 1991 and are estimated at $120 to $130 million for 2004 (Figure 1). The number of new mineral claim units recorded in 2004 is 47 232, an increase of 30% from the previous year (Figure 2). The number of total mineral units in good standing as of January 1, 2005 was 184 464, up about 18% from 2003. The number of forfeited units in 2004 was 12 209, down 10% from 2003. This is the fifth year in a row that there has been an increase in new mineral units recorded and a decrease in forfeited claims, another indicator of sustained and growing interest in the province's mineral resources.

Both the *Mining Exploration Tax Credit Program* and *Exploration Investment Tax Credit* for flow-through investors provide extra incentives to attract risk capital to the province.

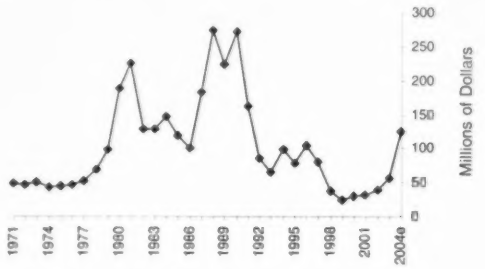

Figure 1. Mineral exploration expenditures.

*Photo 1. The **Willow Creek** coal mine in northeastern British Columbia opened in July, 2004.*

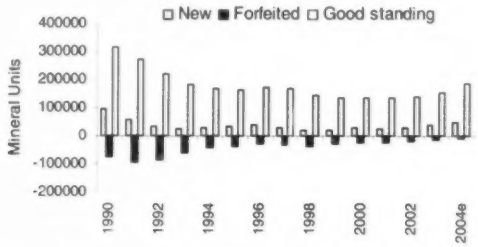

Figure 2. Mineral units (new, forfeited and good standing).

MapPlace, the British Columbia government's geoscience map and data information system, had over 4 million hits during 2004, reflecting the interest in finding new mineral resources.

MINING HIGHLIGHTS

British Columbia's operating mines in 2004 (Figure 5) are forecasting a total value of solid mineral production of $3.39 billion, an increase of 15% over 2003 (Figure 3). The province ranks third in Canada for the value of its mineral production. Coal is the single most important mineral commodity, and copper is a close second (Figure 4). Despite the increase in the value of production, the actual production dropped slightly for copper, gold, silver and zinc. Molybdenum production increased 164% in value over 2003 to about $350 million. This large increase reflects the much higher molybdenum price for production from the Endako and Huckleberry mines, and mining of higher grade ore and improvements to the molybdenum circuit at Highland Valley Copper. Mine production and resources for 2004 are listed in Table 1.

Clean coal production for 2004 is expected to total 27.1 million tonnes, with a forecast value of approximately $1.1 billion. British Columbia has three major coal ports on the west coast - **Roberts Bank**, south of Vancouver, has a capacity of 26 million tonnes per year; **Neptune** terminals (Vancouver Port) has a capacity of 8 million tonnes per year and **Ridley Island** terminal, near Prince Rupert, has a capacity of 12 million tonnes per year. All three had significant unused capacity in 2004.

British Columbia's industrial minerals production for 2004 (including sulphur) is estimated at a value of $340 million. The most economically significant industrial minerals in British Columbia are magnesite, white calcium carbonate, limestone, silica, dimension stone, gypsum, sulphur, construction aggregate, and crushed rock. Commodities produced in lesser quantities include jade (nephrite), magnetite, dolomite, barite, volcanic

*Photo 2. Looking southwesterly over the **Eskay Creek** gold-silver mine in northwestern British Columbia.*

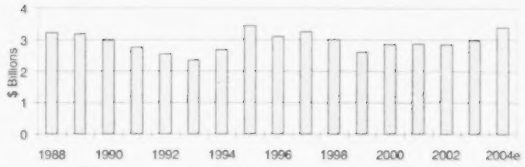

Figure 3. Solid mineral production value in British Columbia.

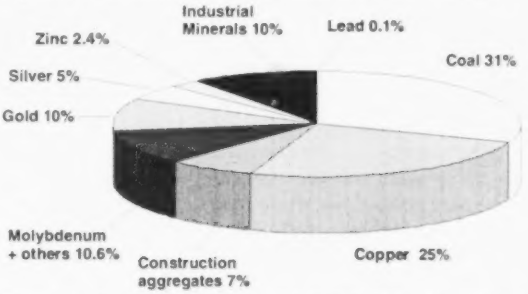

Figure 4. Forecast distribution of British Columbia mineral production by commodity – 2004.

cinder, flagstone, industrial and medical/cosmetic clays, tufa, fuller's earth, bentonite, slag, mineral wool, roofing granules, graphite, and gemstones. There are at least 20 major sites throughout the province where upgrading of industrial minerals into value-added products takes place.

Structural materials production, including the important construction aggregate sector, is estimated to have a value of $240 million. There are aggregate operations throughout the province and they vary from large pits which supply the major metropolitan areas to many smaller pits used locally for road construction. Placer gold production and exploration in British Columbia was concentrated in the Atlin, Dease Lake, Manson Creek, Cariboo and Fort Steele areas and small operators ran most operations.

The provincial mining industry employed a direct workforce of more than 9300 employees, as well as supporting at least as many spin-off jobs. The province has a total land base of 94.5 million hectares of which there are 27 000 hectares, or 0.028%, of disturbed mining lands which are subject to reclamation.

Northwest - Major Mines

The **Eskay Creek** underground gold-silver mine, operated by Barrick Gold Corporation, is expected to produce 9300 kg of gold and 450 000 kg of silver in 2004. It is the fifth largest silver producer in the world and among the richest in terms of value per tonne of ore. Current mine life is estimated to extend until 2008. Exploration was carried out mainly on the Deep Adrian and 22 zone areas, to the north and south of the existing mine workings, respectively.

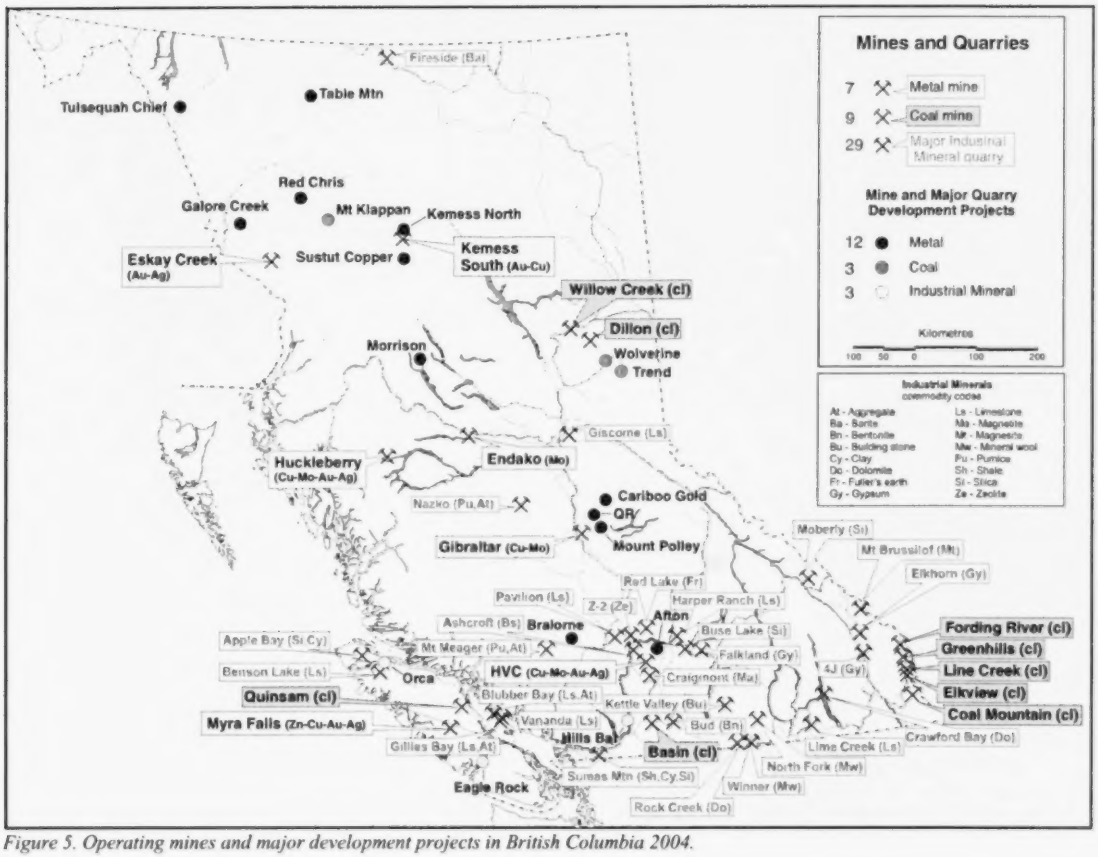

Figure 5. Operating mines and major development projects in British Columbia 2004.

The **Endako** open-pit molybdenum mine, operated by Thompson Creek Mining, has operated for 34 years and is a low-cost producer. As a result of very strong molybdenum prices, the company has embarked on a pit expansion to return to its normal production levels.

The **Huckleberry** open-pit copper-molybdenum mine, operated by Huckleberry Mines Ltd, produced ore from its East zone pit and shipped the concentrates through the port of Stewart to Japan. A large exploration program identified a new potential deposit (Northwest Target), directly north of the Main zone pit. Mine life is estimated to extend until 2007.

Northeast - Major Mines

Pine Valley Mining opened the **Willow Creek** coal mine, 45 kilometres west of Chetwynd. The company has sales of 900 000 tonnes in place through to mid-2005 and hopes to increase the tonnage to 1 to 1.5 million tonnes per year by 2006. Coal is crushed and screened and shipped raw as a pulverized coal injection (PCI) product used in steel making. Shipments in 2004 are expected to total around 400 000 tonnes.

Mine construction is in progress at the **Dillon** open pit coal mine of Western Canadian Coal Corporation, part of its Burnt River coal project. Located 20 kilometres west of Tumbler Ridge, the first shipment of PCI coal was shipped in December. In 2005, initial production is forecast at 250 000 tonnes of raw coal.

Central - Major Mines

The **Kemess South** open-pit mine, operated by Northgate Minerals Corporation, is expected to produce 9300 kg of gold and 34 000 tonnes of copper during 2004. It is the largest gold producer in the province. Existing reserves will provide mill feed until 2008, but the mine life of the operation could possibly be extended more than ten years if the **Kemess North** deposit is put into production. Exploration at Kemess South identified an additional 12 million tonnes of ore in 2004.

The **Gibraltar** open-pit mine reopened in October, 2004, under a joint venture partnership between Taseko Mines Ltd. and Ledcor Mining Ltd. The mine, located near Williams Lake, had a successful 27-year operating history and has been maintained on a stand-by basis since

TABLE 1. FORECAST MINE PRODUCTION 2004

Mine	Operator	Deposit Type / Commodity	Forecast Production	Proven and Probable Reserves (at Jan. 1, 2004)
Metals				
Endako	Thompson Creek Mining Ltd / Sojitz Moly Resources Inc	Calc-alkalic porphyry Mo	5000 t Mo	80 700 000 t at 0.063% Mo (Oct. 1, 2004)
Eskay Creek	Barrick Gold Corp	Transitional Epithermal-VMS Au-Ag	9300 kg Au, 450 000 kg Ag	840 895 t at 34.81 g/t Au and 1604 g/t Ag
Highland Valley Copper	Teck Cominco Ltd / Highmont Mining Company Ltd	Calc-alkalic porphyry Cu-Mo	170 000 t Cu, 5000 t Mo, 500 kg Au, 70 000 kg Ag	252 300 000 t at 0.42 % Cu
Gibraltar	Taseko Mines Ltd / Ledcor Mining Ltd	Calc-alkalic porphyry Cu-Mo	7000 t Cu, 34 t Mo	Sulphide: 163 500 000 t at 0.313% Cu and 0.010% Mo; Oxide: 16 500 000 t at 0.148% Acid Soluble Cu
Huckleberry	Imperial Metals Corp / Mitsubishi Material Corp / Dowa Mining Ltd / Furukawa Company Ltd	Calc-alkalic porphyry Cu-Mo	33 000 t Cu, 170 t Mo	25 018 000 t at 0.507% Cu, 0.014% Mo and 0.059 g/t Au
Kemess South	Kemess Mines Ltd (Northgate Minerals Corp)	Calc-alkalic porphyry Au-Cu	9300 kg Au, 34 000 t Cu	91 700 000 t at 0.699 g/t Au and 0.227% Cu; Kemess North (Probable) 414 000 000 t at 0.31 g/t Au and 0.16% Cu
Myra Falls	NVI Mining Ltd (Breakwater Resources Ltd)	VMS Zn-Cu-Pb-Au-Ag	56 000 t Zn, 11 400 t Cu, 790 kg Au, 22 400 kg Ag	7 747 000 t at 6.3% Zn, 1.2% Cu, 1.2 g/t Au and 40 g/t Ag
Coal				
Basin (Tulameen)	Compliance Energy Corp / Sojitz Coal	Thermal coal	40 000 t	19 000 000 t
Coal Mountain	Elk Valley Coal Partnership	Metallurgical coal	2 500 000 t	30 000 000 t
Dillon	Western Canadian Coal Corp	Metallurgical (PCI) coal	30 000 t	1 560 000 t
Elkview	Elk Valley Coal Partnership	Metallurgical coal	5 800 000 t	259 000 000 t
Fording River	Elk Valley Coal Partnership	Metallurgical coal	10 000 000 t	265 000 000 t
Greenhills	Elk Valley Coal Partnership	Metallurgical coal	5 200 000 t	103 000 000 t
Line Creek	Elk Valley Coal Partnership	Metallurgical and thermal coal	2 500 000 t (including 300 000 t thermal)	12 000 000 t metallurgical and 1 000 000 t thermal
Quinsam	Quinsam Coal Corp (Hillsborough Resources Ltd)	Thermal coal	410 000 t	23 600 000 t
Willow Creek	Pine Valley Mining Corp	Metallurgical (PCI) coal	225 000 t	15 200 000 t

Industrial Minerals

Mine	Operator	Deposit Type / Commodity	Mine	Operator	Deposit Type / Commodity
Apple Bay	Electra Gold Ltd	Geyserite	Kettle Valley quarries	Kettle Valley Stone Company	Ashlar, flagstone, thin veneer
Ashcroft	IG Machine and Fiber Ltd (IKO	Basalt roofing granules	Lime Creek	Imasco Minerals Inc	Limestone
Benson Lake	Imasco Minerals Inc.	Limestone	Moberly	Dynatec Corp	Silica sandstone
Blubber Bay	Ash Grove Cement Corp	Limestone, dolomite, aggregate	Mount Brussilof	Baymag Inc	Magnesite
Bud	Western Industrial Clay Products Ltd	Bentonite	Mount Meager	Great Pacific Pumice Inc	Pumice, pozzolan
Buse Lake	Lafarge Canada Inc	Volcanic ash (alumina-silica)	Nazko	Canada Pumice Corp	Lava rock
Craigmont	Craigmont Mines Joint Venture	Magnetite tailings	North Fork	Roxul (West) Inc	Syenite (mineral wool)
Crawford Bay	Imasco Minerals Inc	Dolomite	Pavilion	Graymont Western Canada Inc	Limestone
Elkhorn	BPB Canada Inc	Gypsum	Red Lake	Western Industrial Clay Products Ltd	Diatomaceous earth, leonardite
Falkland	Lafarge Canada Inc	Gypsum	Rock Creek	Mighty White Dolomite Ltd	Dolomite
Fireside	Fireside Minerals Inc	Barite	Sumas Mountain	Clayburn Industries Ltd	Shale, sandstone, clay, fireclay
Four J	Georgia-Pacific Canada Inc	Gypsum	Vananda	Imperial Limestone Company Ltd	Limestone
Gillies Bay	Texada Quarrying Ltd (Lafarge Canada Inc)	Limestone, aggregate	Winner	Roxul (West) Inc	Diorite (mineral wool)
Giscome	Pacific Lime Products Ltd	Limestone	Z-2	Industrial Minerals Processors	Zeolite
Harper Ranch	Lafarge Canada Inc	Limestone			

1998. The 12-year mine plan includes production from several zones. Anticipated annual production is 32 000 tonnes of copper and more than 400 tonnes of molybdenum. Once the mine reaches full capacity, the owners will investigate the feasibility of reopening its extraction-electrowinning leach plant, as well as constructing a hydrometallurgical plant onsite for longer term operations.

The **Nazko** lava rock quarry near Quesnel, operated by Canada Pumice Corporation, doubled its production level over the past year and plans a further expansion and new marketing program for 2005.

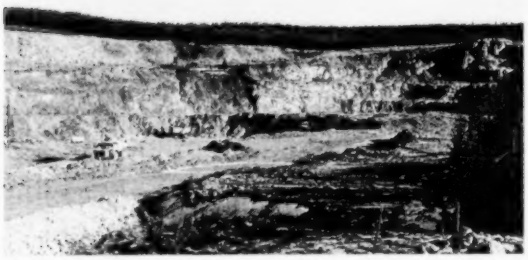

*Photo 3. The **Gibraltar** mine reopened in October, 2004 after a closure of more than 5 years.*

Kootenays - Major Mines

Elk Valley Coal Corporation in southeastern British Columbia operates 5 coking coal mines, **Fording River, Greenhills, Line Creek, Elkview** and **Coal Mountain**, providing it with flexibility to blend coals from different mines to meet customer needs. The company expects to produce about 26 million tonnes in 2004. The Corporation, 62% owned by Fording Canadian Coal Trust and 38% by Teck Cominco Limited, is the world's second-largest supplier of metallurgical coal. In late December, 2004, Elk Valley Coal Corporation signed letters of intent with two of the world's largest steelmakers, Japan's Nippon and South Korea's Posco, for 10-year sales contracts worth $50 million.

Silica is produced by Dynatec Corp from the **Mt. Moberly** mine, located near Golden. Northeast of Radium Hot Springs, Baymag Inc. produces high-quality magnesite from its **Mount Brussilof** open-pit mine. Production in 2004 was projected to be 190 000 tonnes.

Further south, BPB Canada Inc. operates the **Elkhorn** gypsum mine, east of Windermere, and Georgia-Pacific Canada Inc. produces gypsum from the **Four J** mine, southeast of Canal flats. Production at the Elkhorn and Four J mines for 2004 was projected to be approximately 560 000 and 225 000 tonnes, respectively. Imasco Minerals Inc. produces a variety of crushed and ground rock products at its Creston Operations plant near Sirdar. These products are derived from rock from an underground dolomite mine at **Crawford Bay**, a limestone quarry at **Lime Creek** east of Salmo and a granite quarry at Sirdar. Mighty White Dolomite Ltd. produces a range of crushed and ground dolomite products from its quarry and plant at **Rock Creek**. The **Winner** quarry near Greenwood shipped diorite to the Roxul (West) Inc. mineral wool manufacturing plant in Grand Forks.

*Photo 4. The **Fording River** coal mine in the Elk Valley, southeastern British Columbia.*

Thompson-Okanagan - Major Mines

The **Highland Valley Copper** open-pit mine near Kamloops, operated by Teck Cominco Ltd. and Highmont Mining Company, is Canada's largest base metal mine. It is the fifth largest open-pit mining operation in the world, with a daily mill throughput averaging 135 000 tonnes of rock. Production in 2004 is expected to be 170 000 tonnes of copper, 5000 tonnes of molybdenum and minor byproduct gold and silver. The mine is scheduled to close in mid-2009; however, the partners are studying the possibility of deepening the Valley pit, which could extend the mine-life to 2013.

Compliance Energy Corporation and Sojitz Coal Development (Canada) Ltd. mined about 40 000 tonnes of raw thermal coal from the **Basin** property, near Tulameen. The coal was trucked and washed at its Similco mine site.

Over 250 people are employed at industrial minerals quarries and processing plants in the Thompson-Okanagan region. The **Kamloops** cement plant and **Harper Ranch** limestone quarry of Lafarge Canada Inc. were expected to operate close to capacity in 2004. Near Cache Creek, Graymont Western Canada Inc. operates the **Pavilion** limestone quarry and lime plant. Employing mainly First Nations workers, the operation produces lime used in pulp mills, mines and other industrial processes. The **Ashcroft** basalt quarry and roofing granule plant east of Ashcroft, operated by IG Machine and Fiber Ltd., produces about 250 000 tonnes of roofing granules in ten distinct colours. Craigmont Mines Ltd. processes and recovers about 70 000 tonnes of magnetite annually from its **Craigmont** tailings operation near Merritt. The magnetite is used in most coal washing plants in western Canada.

Western Industrial Clay Products Ltd. manufactures a variety of products at its plant in Kamloops, using raw materials from its **Red Lake** (diatomaceous earth) quarry northwest of Kamloops and its **Bud** (bentonite) quarry at Princeton. Zeolite was mined from Industrial Mineral Processors' **Z2** quarry near Cache Creek and processed at a plant in Ashcroft. At Princeton, Zeo-Tech Enviro

Corporation crushed and stockpiled zeolite material from its **Zeo** quarry, to provide material for mill start-up and trucking to market in 2005. Okanagan Opal Inc. produces attractive fire opal gemstones and jewelry from its **Klinker** property, west of Vernon. Decorative rock and dimension stone are produced at numerous small quarries throughout the region (*e.g.* **Nipple Mountain** and **Begbie** quarries) by small companies, including Kettle Valley Stone Company in Kelowna.

Southwest - Major Mines

The **Myra Falls** underground mine west of Campbell River, operated by NVI Mining Ltd., a subsidiary of Breakwater Resources Ltd., has been in operation since 1966. Approximately 1 million tonnes of ore are currently processed annually in the mill producing copper, zinc, silver and gold concentrates. The company is in the process of optimizing the mining plan and is considering the addition of a lead circuit. In 2004, the company conducted exploration in the H-W and 43 zones and work on the Marshall East zone is planned.

The largest limestone production centre in the province is **Texada Island**, where three quarries, **Gillies Bay**, **Blubber Bay** and **Vananda**, traditionally ship 5 to 6 million tonnes annually. White calcium carbonate is produced from **Gillies Bay** and also from the **Benson Lake** quarry on northern Vancouver Island. **Texada Island** limestone producers are capitalizing in the rapidly expanding market for crushed rock, the natural byproduct of their limestone operations. Lehigh Northwest Cement Limited ships aggregate from its facility at **Sechelt** to the San Francisco Bay area.

Clayburn Industries Ltd. processes clay from its **Sumas Mountain** operation and Clayburn, Lafarge Canada Inc. and Lehigh Northwest Cement Ltd. produce shale and sandstone from their **Sumas** quarry. Ironwood Clay Company Inc. produces cosmetic/medical clay seasonally from its **De Cosmos Lagoon** quarry on Hunter Island, west of Bella Coola.

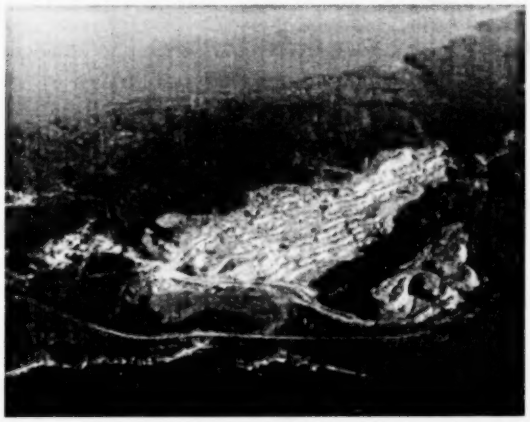

*Photo 5. The **Blubber Bay** operation, one of the large limestone producers on Texada Island near Powell River.*

Westcoast Granite Manufacturing Inc., Margranite Industries and Matrix Marble Corporation operate stone-processing plants. Dimension stone is quarried from several locations, including **Gordon River**, **Whistler**, **Hisnet Inlet**, **Tahsis Inlet**, **Hardy Island** and **Haddington Island**. Great Pacific Pumice Ltd. ships a variety of pumice-based products from its **Pum** property on Mount Meager, north of Pemberton.

Electra Gold is developing its **Apple Bay** chalky geyserite (silica and alumina) property, west of Port Hardy to supply cement plants in Vancouver and Seattle.

Hillsborough Resources is forecast to produce 410 000 tonnes from its **Quinsam** thermal coal mine on Vancouver Island. A small exploration drilling program was conducted at the Quinsam mine.

MAJOR DEVELOPMENT PROJECTS

The **Mount Polley** copper-gold mine near Williams Lake and the **Wolverine** coal mine near Tumbler Ridge will be opening in early 2005. They may be joined by other mines over the next couple of years (*see* Table 2).

Northwest - Major Development Projects

During 2004, Redcorp Ventures completed a large underground drilling program on its **Tulsequah Chief** project, south of Atlin. An updated resource calculation and feasibility study will be forthcoming. East of Dease Lake, Western Keltic Mines completed a large drilling program aimed at evaluating its **Kutcho Creek** deposits for possible underground exploitation of the higher-grade core, along with the adjacent Esso West deposit. A feasibility study is expected to be initiated in 2005.

Fortune Minerals Limited continued to conduct various studies to outline a number of possible development scenarios for its **Klappan** anthracite coal property, 75 kilometres southeast of Dease Lake. The company may also benefit from some of the data acquired by Shell Canada's coal bed methane drilling that took place on the property during 2004.

The largest exploration program in the province was at the **Galore Creek** gold-copper-silver project, located 125 kilometres northwest of Stewart. Utilizing five drill rigs, NovaGold Resources expanded the previously identified resources and discovered the high-grade, near-surface West Fork zone. On the adjacent **Copper Canyon** copper-gold target, NovaGold (under an option agreement with Eagle Plains Resources) also encountered significant mineralization in drilling.

A large in-fill drilling program on bcMetals' **Red Chris** copper-gold project east of Iskut was completed, and a feasibility study was released in November. A

*Photo 6. Logging drill core in the **Galore Creek** camp, looking south.*

Memorandum of Understanding between bcMetals and Outokompu Technology of Finland outlines arrangements for an onsite copper production facility, as part of its proposed mine operation.

In the Babine camp, Pacific Booker Minerals continued to study the feasibility of advancing its **Morrison/Hearne Hill** copper-gold project to production.

Northeast - Major Development Projects

The Burnt River property includes the Dillon mine and the nearby 32-million tonne **Brule** deposit owned by Western Canadian Coal Corporation. Western Canadian is expected to apply for an Environmental Assessment Certificate for this deposit in 2005, in preparation for mine development. They also continued exploration on their Perry Creek deposit (**Wolverine**) coal mine, about 20 kilometres west of Tumbler Ridge. Perry Creek may start producing in 2005. Northern Energy and Mining Inc. (NEMI) continued exploration on its **Trend** property, 25 kilometres south of Tumbler Ridge. It hopes to begin production of 240 000 tonnes per year in 2005 from the L-Seam.

TABLE 2. MAJOR PROJECTS UNDER CONSIDERATION FOR MINE DEVELOPMENT IN BRITISH COLUMBIA

Project Name	Owner/Operator	Commodities
Apple Bay	Electra Gold Ltd	Silica, Kaolin
Bralorne	Bralorne Gold Mines Ltd	Au
Brule	Western Canadian Coal Corp	Coal
Bingay Creek	Hillsborough Resources Ltd	Coal
Cariboo Gold Quartz	International Wayside Gold	Au
Elk (Siwash North)	Almaden Minerals Ltd	Au
Galore Creek	NovaGold Resources Inc	Cu-Au-Ag
Greenwood Gold	Merit Mining Corp	Cu-Au
Hills Bar	Qualark Resources Inc	Aggregate
J&L (McKinnon Ck.)	BacTech Mining Corp	Au-Ag-Cu-Zn-Pb
Kemess North	Northgate Minerals Corp	Au-Cu
Kutcho Creek	Western Keltic Mines Inc	Cu-Zn-Au-Ag
Morrison/Hearne Hill	Pacific Booker Minerals Inc	Cu-Au
Mount Klappan	Fortune Minerals Ltd	Coal
Mt. Milligan	Placer Dome Inc	Au-Cu
Orca	Polaris Minerals Corp	Aggregate
Prosperity	Taseko Mines Ltd	Cu-Au
QR	Cross Lake Minerals Ltd	Au
Red Chris	bcMetals Corp	Au-Cu
Sustut Copper	Northgate Minerals Corp	Cu-Ag
Table Mountain	Cusac Gold Mines Ltd	Au
Trend	Northern Energy and Mining	Coal
Tulsequah Chief	Redfern Resources Ltd	Cu-Au-Zn-Ag-Pb
Turnbull North Pit	Fording River Operations	Coal
Willa/LH	Bethlehem Resources Corp	Cu-Au
Wolverine (Perry Ck.)	Western Canadian Coal Corp	Coal

Au=gold; Ag=silver; Cu=copper; Pb=lead; Zn=zinc

Central - Major Development Projects

Northgate Minerals Corporation's **Kemess North** project, near its Kemess South mine, is being reviewed by the British Columbia Environmental Assessment Office. If approved, the combined operations of the mine and the Kemess North deposit could extend the mine life to 2020.

Northgate Minerals Corp also acquired the **Sustut** copper property in 2004. It hopes to mine the deposit on a seasonal basis, with the ore being processed at its nearby Kemess South mine 40 kilometres to the north.

The significant expansion of mineralization in the Northeast zone, and below the Springer deposit, at the **Mount Polley** gold-copper mine, northeast of Williams Lake, has led Imperial Metals to announce the re-opening of the mine in early 2005. The positive results have highlighted the potential for gold-copper open-pit mines throughout the province.

Cross Lake Minerals is expected to announce the reopening of its **QR** gold mine, east of Quesnel, in 2005. It continued to drill for additional resources, especially in the North zone.

Placer Dome re-drilled its **Mt. Milligan** gold-copper project, west of Mackenzie. It plans to update its previous feasibility study in 2005; this might lead to an application for an amendment to its existing Mine Development Certificate.

International Wayside Gold Mines extracted a 10 000-tonne underground bulk sample from its Bonanza Ledge zone on its **Cariboo Gold Quartz** project, near Wells, and had it processed at the nearby Mount Polley mine.

Thompson-Okanagan - Major Development Projects

In the Kamloops region, DRC Resources commenced a major underground exploration program on its **Afton** copper-gold-silver deposits in December. The deposit sits directly beneath an open pit that produced from 1977 to 1988. It is a higher-grade zone that would have to be mined from underground, if proven to be economically feasible.

Southwest - Major Development Projects

In recent years, the most significant industrial minerals trend in British Columbia has been an increasing export of crushed stone and natural aggregate to urban centres along the west coast of the United States and higher sales within British Columbia's Lower Mainland. These markets are becoming very competitive as industry identifies new potential for development. A good example

*Photo 7. Diamond drill core from the copper-gold Northeast zone at the **Mount Polley** mine.*

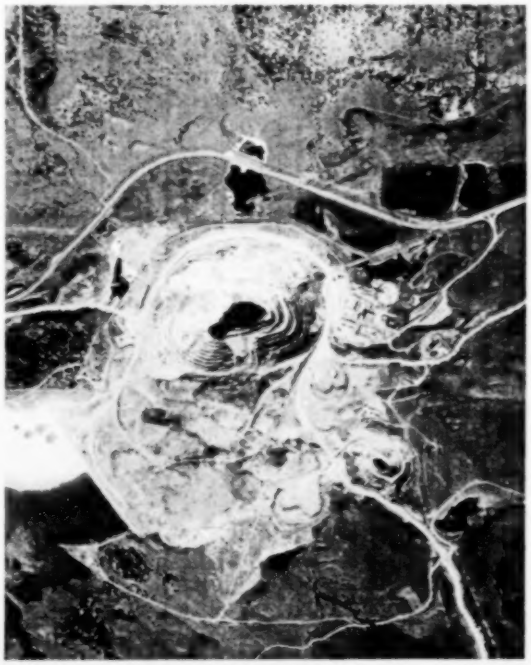

*Photo 8. Aerial view of the **Afton** open pit that is currently being explored for the potential to become an underground mine (courtesy of DRC Resources Corp).*

of this is the $100-million construction aggregate complex (**Eagle Rock Quarry**) and ship-loading facility planned for development near Port Alberni. Other significant development projects include **Orca** sand and gravel near Port McNeil and **Hills Bar** aggregate near Yale.

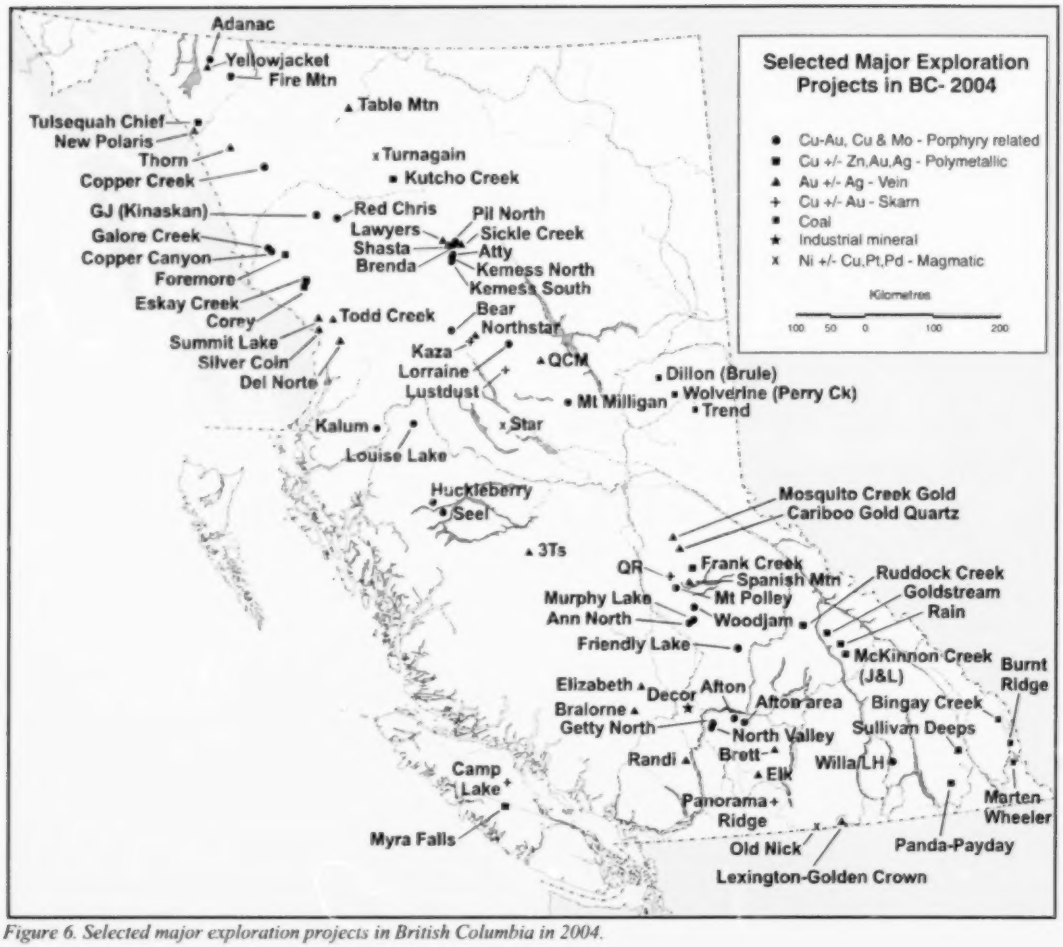

Figure 6. Selected major exploration projects in British Columbia in 2004.

MINERAL EXPLORATION

There were 170 exploration projects in British Columbia with budgets in excess of $100 000 (selected projects listed in Table 3 and shown in Figure 6), up 95% from 2003. This includes 30 projects with expenditures in excess of $1 million. The number of drilling programs and the total metres drilled rose significantly, with over 170 projects aggregating approximately 521 000 metres. More than 80% of exploration spending was on advanced projects, while there were very few grassroots programs (Figure 7). The targets sought, by deposit type, are shown in Figure 8. Twenty-two bulk sample programs were completed in 2004, including sampling on the **Apple Bay**, **Bralorne**, **Cariboo Gold Quartz**, **Getty North**, **J&L**, **Kutcho Creek** and **Trend** projects.

Coal tenure acquisitions increased dramatically in 2004, fueled by the high coal prices, particularly in the northeast. Provincial exploration expenditures for coal more than doubled to $5.8 million in 2004. In addition, $700 000 were spent on development drilling (~ 13 000 metres) on mine sites in active pits. Exploration expenditures on industrial minerals projects are estimated at $1.5 million. Ten drilling projects with an aggregate of approximately 4400 metres were completed.

At least 24 new mineral discoveries were reported in 2004 (Figure 9).

TABLE 3. SELECTED MAJOR EXPLORATION PROJECTS IN BRITISH COLUMBIA IN 2004

Property	Operator	Minfile (NTS)	Commodity	Deposit Type	Work Program	Region
3Ts	Southern Rio Resources Ltd	093F 055, 068	Au-Ag	Epithermal Vein	G; P; OB; DD (~5500 m)	C
Adanac	Adanac Moly Corp	104N 052	Mo	Calc-alkalic Porphyry	IP; A; DD (9022 m); EN	NW
Afton (Ajax)	DRC Resources Corp	92INE023	Cu, Au, Pd, Ag	Alkalic Porphyry	UG; FS; DD (~2000 m)	TO
Afton Area	Abacus Mining and Exploration Corp	92INE028, 030, 026	Cu, Au, Ag, Pd	Alkalic Porphyry	IP; DD (~27,500 m)	TO
Ann North	GWR Resources Inc	92P 002, 115, 034	Cu, Au, Ag	Alkalic Porphyry	TR; DD (~3000 m)	TO
Atty	Finlay Minerals Ltd	094E 119, 022	Cu-Au	Alkalic Porphyry	G; IP; MG; DD (1653 m)	C
Bear	Imperial Metals Corporation	094D 068	Cu-Mo	Calc-Alkalic Porphyry	DD (170+ m)	C
Bingay Creek	Hillsborough Resources Ltd	082JSE011	Metallurgical coal	Sedimentary	RC (1316 m); EN	K
Bralorne	Bralorne Gold Mines Ltd	92JNE164, 001	Au-Ag	Mesothermal Vein	BU; MS; UG; DD (~3000 m)	TO
Brenda	Northgate Minerals Corporation	094E 147	Au-Cu	Calc-alkalic Porphyry	A; DD (1446 m)	C
Brett	Mosquito Cons. Gold Mines Ltd	82LSW110, 131, 084, 047, 132, 130	Au, Ag	Epithermal Vein	TR; GC; G; A; DD (2743 m)	TO
Burnt Ridge	Elk Valley Coal Corp	082JSE001	Metallurgical Coal	Sedimentary	RC (8843 m)	K
Burnt River (Dillon & Brule)	Western Canadian Coal Corp	093P007, 008	Metallurgical (PCI) Coal	Sedimentary	RD (2416 m); DD (462 m); down-hole GP; BU (680 kg); CQ; GT; EN; PF; FS	NE
Camp Lake	Better Resources Ltd	(92K/04E)	Cu-Au-mag	Skarn	G; P; GC; MG; DD (576 m)	SW
Cariboo Gold Quartz (incl. Bonanza Ledge)	International Wayside Gold Mines Ltd	093H 019	Au	Replacement, Mesothermal Vein	A; DD (14 142 m); BU (10 000 t); PF; EN	C
Copper Canyon	NovaGold Resources Inc	104G 017	Cu, Au	Alkalic Porphyry	AB-MG/RD; DD (3017 m)	NW
Copper Creek	Firesteel Resources Inc	104J 005	Cu, Au	Alkalic Porphyry	G; GC; TR; DD (1555 m)	NW
Corey	Kenrich Eskay Mining Corp	104B 011, 355	Au, Ag	Epithermal VMS	G; GC	NW
Decor Pit (Hat Creek)	Pacific Bentonite Ltd	92INW047, 084	Burnt shale (alumina rock and landscape rock)	Industrial Mineral	BU (~7000 t)	TO
Del Norte	Lateegra Resources Corp	104A 161, 176	Au, Ag	Mesothermal vein	DD (4816 m)	NW
Elizabeth	J-Pacific Gold Inc	92O 012	Au, Ag	Mesothermal Vein	TR; G; GC; UG; DD (~3000 m)	TO
Elk (Siwash North)	Almaden Minerals Ltd	92HNE096	Au, Ag	Mesothermal Vein	EN; DD (10,265 m)	TO
Eskay Creek	Barrick Gold Corp	104B 008	Au, Ag	Epithermal VMS	DD (18 055 m)	NW
Fire Mountain	bcMetals Corp Ltd	104N 067	Mo	Calc-alkalic Porphyry	DD (3379 m)	NW
Foremore	Roca Mines Inc	104G 148	Au, Ag, Cu, Zn	VMS (Kuroko)	G; P; GC; UT; MG; DD (5900 m)	NW
Frank Creek, SCR, Ace	Barker Minerals Ltd	093A 142, 143, 153	Cu-Zn-Pb-Au-Ag	VMS; Mesothermal Vein	G; GC; GP; TR; DD (1881 m)	C
Friendly Lake	Lithic Resources Ltd	92P 134, 006, 007	Cu, Mo, Pb, Zn, Au, Ag, Pd, Pt	Alkalic Porphyry; Vein	AB-MG; IP; G; DD (~2400 m)	TO
Galore Creek	NovaGold Resources Inc	104G 090, 091, 095, 097	Cu, Au, Ag	Alkalic Porphyry	G; AB-MG/RD; IP; DD (23 000 m); EN; PF	NW
Getty North	Getty Copper Inc	92INE038	Cu	Calc-alkalic Porphyry	BU; MS; IP; DD (~5000 m)	TO
GJ (Kinaskan)	Canadian Gold Hunter Corp	104G 034, 177	Cu, Au	Alkalic Porphyry	G; P; TR; DD (4267 m)	NW
Golden Crown	Gold City Industries Ltd	082ESE032, 033	Au	Mesothermal Vein	TR; MG; EM; GC; DD (230m)	K
Goldstream (Spire & Boutwell)	Orphan Boy Resources Inc	82M 278	Cu, Zn, Au, Ag	VMS (Besshi)	GP; G; GC; TR; DD (1952 m); FS	TO
Huckleberry	Imperial Metals Corporation	93E 037	Cu, Mo	Calc-alkalic Porphyry	G; IP; DD (~8000 m)	NW
Kalum	Eagle Plains Resources Ltd	103I 019, 174, 213	Au, Ag	Pluton-Related Vein	G; AB-EM/MG, DD (1958m)	NW
Kaza	Northern Hemisphere Development Corp	093M 111	Cu-Au	Skarn	A; TR; DD (1077 m)	C
Kemess North & area	Northgate Minerals Corporation	094E 021	Au-Cu	Calc-alkalic Porphyry	G; GC; IP; TR; DD (7561 m)	C
Kemess South	Northgate Minerals Corporation	094E 094	Au-Cu	Calc-alkalic Porphyry	DD (7307 m);	C
Kutcho Creek	Western Keltic Mines Inc	104I 060	Cu, Zn, Ag, Au	VMS (Kuroko)	DD (7691 m); MS	NW
Lawyers	Bishop Gold Inc	094E 068	Au-Ag	Epithermal Vein	A; GC; MG; VLF; TR	C
Lexington	Gold City Industries Ltd	082ESE041, 042	Au	Mesothermal Vein/Polymetallic Vein	TR; DD (4847 m); RC	K
Lorraine-Jajay	Eastfield Resources Ltd	093N 002, 066, 224	Cu-Au	Alkalic Porphyry	A; G; GC; IP; DD (4439 m)	C
Louise Lake	Firestone Ventures Inc	93L 079	Cu, Au	Calc-alkalic Porphyry	DD (1675 m)	NW
Lustdust	Alpha Gold Corp	093N 009	Au-Ag-Cu-Zn-Pb	Skarn; Manto; Mesothermal Vein	GC; DD (6010 m)	C

TABLE 3 CONT. SELECTED MAJOR EXPLORATION PROJECTS IN BRITISH COLUMBIA IN 2004

Property	Operator	Minfile (NTS)	Commodity	Deposit Type	Work Program	Region
Marten Wheeler	Elk Valley Coal Corp	082GNE006	Metallurgical Coal	Sedimentary	RC (1596 m)	K
McKinnon Creek (J&L)	BacTech Mining Corp	82M 003	Au, Ag, Cu, Zn, Pb	Stratiform; Mesothermal vein	PF; EN; MS; UG-BS (5 t); UG-DD (~2300 m)	TO
Mosquito Creek Gold	Island Mountain Gold Mines Ltd	093H 010	Au	Replacement; Mesothermal Vein	GC; TR; DD (859 m)	C
Mount Polley	Imperial Metals Corporation	093A 008, 164	Cu-Au-Ag	Alkalic Porphyry	G; TR; IP; DD (~ 40 000 m) on Northeast zone; DD (~6000 m) on Bell pit; DD (~10,000 m) on Springer pit; MS; FS; EN; R	C
Mt. Milligan	Placer Dome Inc	093N 191, 194	Au-Cu	Alkalic Porphyry	G; DD (~2200 m); MT; FS	C
Murphy Lake	Candorado Operating Co. Ltd	93A 044, 073, 113, 063, 92P 004	Cu, Au	Alkalic Porphyry	G; TR; DD (1604 m)	TO
Myra Falls	NVI Mining Ltd (Breakwater Resources Ltd)	92F 330, 071, 072, 073	Cu, Zn, Pb, Au, Ag	VMS (Kuroko)	DD (8500 m)	SW
New Polaris	Canarc Resource Corp	104K 003	Au	Mesothermal Vein	DD (~2000 m)	NW
North Valley	Highland Valley Copper	092INW040, 011, 030, 029, 053, 085, 005	Cu, Mo, Au, Ag	Calc-alkalic Porphyry	IP; DD (~6500 m)	TO
Northstar (Fred)	Northern Hemisphere Development Corp	094D 032	Cu	Volcanic Redbed Copper	A; TR; DD (~1000 m)	C
Old Nick	Jantri Resources Inc	082ESW055	Ni, Co	Magmatic	GC; DD (2152 m)	K
Panda-Payday	Klondike Gold Corp	082FSE110	Zn, Pb, Ag	Sedex	DD (2733 m)	K
Panorama Ridge	Goldcliff Resource Corp	82ESW052, 259	Au	Skarn	TR; GC; G; DD (2277 m)	TO
Pit North	Finlay Minerals Ltd	094E 029, 083, 213, 216	Au-Cu	Calc-alkalic Porphyry; Epithermal vein	A; G; GC; IP; TR; DD (6168 m)	C
QCM	Canadian Gold Hunter Corp	093N 200	Au	Mesothermal Vein	IP; TR; DD (1190 m)	C
QR	Cross Lake Minerals Ltd	093A 121	Au	Skarn	G; DD (~4000 m); PF; FS	C
Rain (Sorcerer)	Orphan Boy Resources Inc	82M 156	Cu, Zn, Pb, Au, Ag, Mo, W	VMS; Skarn; Porphyry; Vein	GC; G; TR; DD (2500 m)	TO
Randi	Locke Goldsmith	092ISW054	Au, Ag, Cu	Mesothermal Vein	DD (~10,000 m)	TO
Red Chris	bcMetals Corp Ltd	104H 005	Cu, Au	Alkalic Porphyry	DD (4848 m); GD (1279 m); CD (779 m); EN; FS	NW
Ruddock Creek	Cross Lake Minerals Ltd	82M 082, 83	Zn, Pb, Ag	Stratiform	GP (AB, DH); DD (1839 m)	TO
Seel	Grayd Resource Corp & Gold Reach Resources Ltd	93E 105	Cu, Au	Calc-alkalic Porphyry	G; R; GC; IP; DD (~2000 m)	NW
Shasta	Sable Resources Ltd	094E 050	Au-Ag	Epithermal Vein	DD (1075 m)	C
Sickle Creek	Stealth Minerals Ltd	094E 237	Au-Ag; Cu-Au	Epithermal Vein; Calc-alkalic Porphyry	G; P; GC; IP; DD (3870 m)	C
Silver Coin	Pinnacle Mines Ltd	104B 095	Au, Ag	Epithermal Vein	DD (3000 m)	NW
Spanish Mountain	Skygold Ventures Ltd/Wildrose Resources Ltd	093A 043	Au	Mesothermal Vein	G; TR; GC; RC (~2500 m)	C
Star	Minterra Resources Corp	094C 090	Cu-PGE	Magmatic	DD (1044 m)	C
Sullivan Deeps	Stikine Gold Corporation	82F/16E	Zn, Pb, Ag	Sedex	DD (2766m in SD#04-01 Phase 1); UT	K
Summit Lake	Tenajon Resources Corp	104B 034	Au	Intrusion-related Vein	DD (1280 m)	NW
Table Mountain	Cusac Gold Mines Limited	104P 070	Au	Orogenic Vein	DD (6478 m)	NW
Thorn	Rimfire Minerals Corp & Cangold Limited	104K 031	Ag, Au	High Sulphidation Epithermal Vein	IP; EM; DD (1810 m)	NW
Todd Creek	Lateegra Resources Corp	104A 001	Au, Cu	Epithermal Vein	DD (750 m)	NW
Trend	NEMI Northern Energy & Mining Inc	093I 030	Metallurgical Coal	Sedimentary	A; G; TR; DD (2724 m); RT (4531 m); BU (9 t); CQ; EN; PF; R	NE
Tulsequah Chief	Redfern Resources Ltd	104K 002	Cu, Pb, Zn, Ag, Au	VMS (Kuroko)	UG (160 m); R; DD (30 444 m); EN	NW
Tumagain	Hard Creek Nickel Corp	104I 119, 120, 051	Ni, Cu, Co	Magmatic	AB-EM/MG; DD (7645 m)	NW
Willa/LH	Bethlehem Resources Corporation	082FNW071, 212, 213	Au, Cu, Ag	Calc-alkalic Porphyry	P; G; GC; GP; DD (6500m)	K
Wolverine (Perry Creek)	Western Canadian Coal Corp	093P 015, 025	Metallurgical Coal	Sedimentary	DD (1000 m); BU; GT; CD; PF	NE
Woodjam	Fjordland Exploration Inc / Wildrose Exploration Ltd	093A 078, 124	Au-Cu	Alkalic Porphyry	G; DD (~4000 m)	C
Yellowjacket	Muskox Minerals Corp	104N 043	Au	Orogenic Vein	AB-EM/MG; DD (~3750 m)	NW

Work program abbreviations:

A = access; trail, road construction on claims; AB-EM = airborne electromagnetics; AB-MG = airborne magnetics; AB-RD = airborne radiometrics; BU (X tonnes) = bulk sample (weight in tonnes if known); CD = condemnation drilling; CQ = coal quality testing; CT = carbonization test (coal); DD (Xm) = diamond drilling totaling X metres; EN = environmental baseline studies/monitoring, remediation work; FS = feasibility studies; G = geology, mapping, etc; GC = geochemical sampling (rock, soil, silt, etc); GD = geotech drilling; GP = geophysics (general); IP = Induced Polarization; 3D-IP; MG = magnetics; MK = marketing-primarily for industrial mineral products; MS = metallurgical studies; OB = overburden drilling; P = prospecting; PD = percussion drilling; PF = pre-feasibility studies; R = reclamation; RC = reverse circulation drilling; TR = trenching; UG (X m) = X metres of underground development; UG-BU = underground bulk sample; OP-BU = open-pit bulk sample; UT = UTEM; VLF; WT = washability test (coal)

Regions: C = central - office in Prince George; K = Kootenay - office in Cranbrook; NE = Northeast - office in Prince George; NW = Northwest - office in Smithers; SW = Southwest - office in Vancouver; TO = Thompson-Okanagan - office in Kamloops

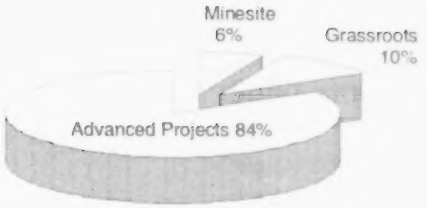

Figure 7. Exploration expenditures by type of program – 2004.

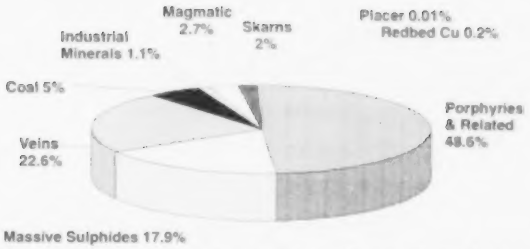

Figure 8. Percentage of project expenditures, focused on specific deposit types in 2004.

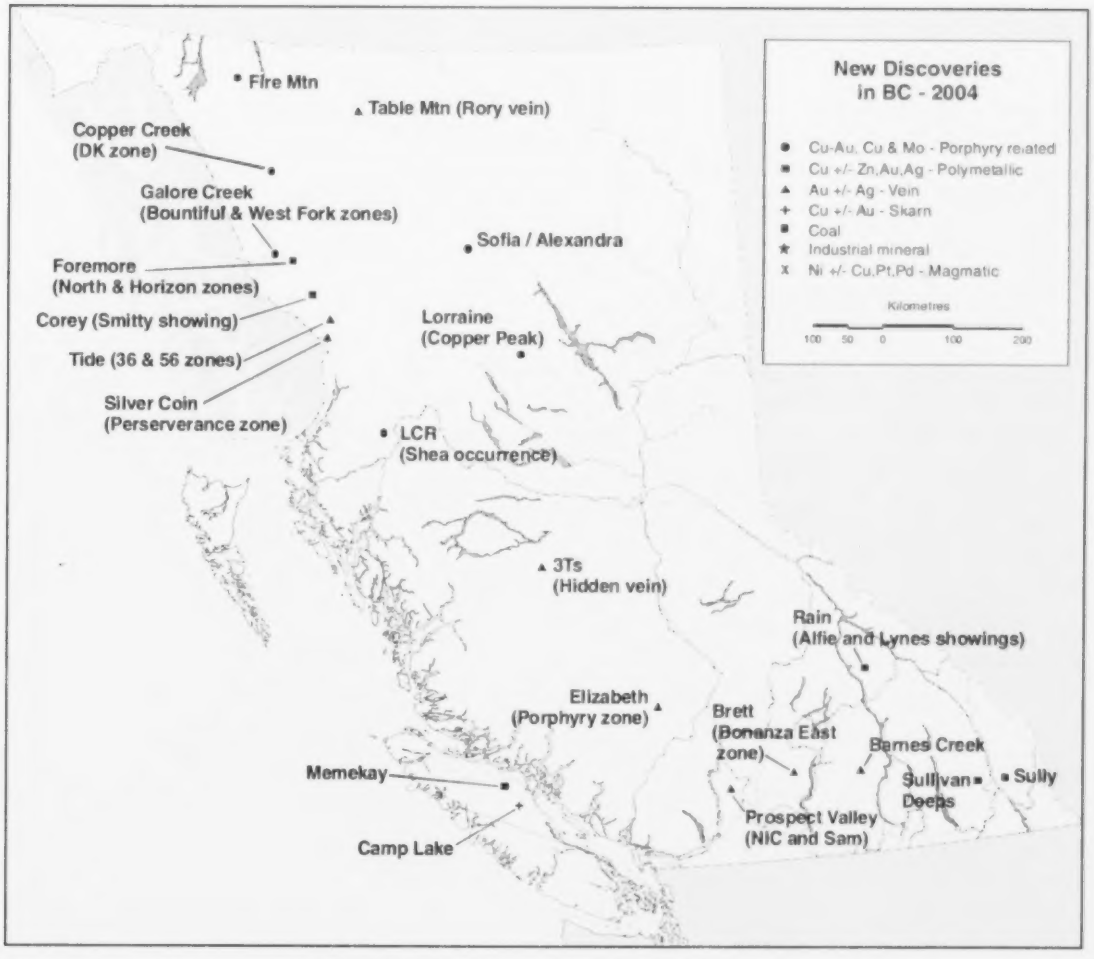

Figure 9. New mineral discoveries in British Columbia.

Northwest - Major Exploration Projects

In the Atlin region, the most advanced programs were carried out by Adanac Moly Corporation on its **Adanac (Ruby Creek)** molybdenum property and by Muskox Minerals who drilled along the Pine Creek fault structure on its **Yellowjacket** gold project. Fifty-two kilometres east of Atlin, bcMetals Corp discovered porphyry molybdenum mineralization during a deep drilling program.

Southwest of Atlin, Cangold Limited and Rimfire Minerals drilled the Oban Breccia polymetallic zone, as well as several other untested anomalies on their **Thorn** property.

Drilling by Cusac Gold Mines at its **Table Mountain** gold mine, in the Cassiar region, resulted in the discovery of the Rory vein. Underground mining on both the Rory and East Bain veins is being contemplated. Hard Creek Nickel Mines continued drilling on its Horsetrail and Cub zones and the newly identified DJ zone on its **Turnagain** nickel-copper-platinum group elements property, west of Dease Lake.

Canadian Gold Hunter extended the strike length of its copper-gold mineralization to over 1100 metres on its Donnelly zone at its **Kinaskan (GJ)** project, west of Iskut. Firesteel Resources drill tested the newly discovered DK prospect on its **Copper Creek** copper-gold property, northwest of Telegraph Creek.

On the **Foremore** property, west of Bob Quinn Lake, Roca Mines drill tested several targets; the North VMS and Horizon Gold skarn zones were two new discoveries. Kenrich-Eskay Mining discovered the **Smitty** epithermal VMS showing on its Corey property, south of the Eskay Creek mine. Pinnacle Mines Ltd. discovered significant epithermal gold-silver mineralization in the Perseverance zone on its **Silver Coin** property, 20 kilometres north of Stewart. Rimfire Minerals discovered gold-silver mineralization in the 36 and 56 zones on its **Tide** property, 36 kilometres north of Stewart.

Tenajon Resources reported significant results from its underground drilling program on its **Summit Lake (Scottie Gold)** gold mine, north of Stewart. South of Stewart, Ascot Resources is exploring a significant sand and gravel deposit at **Swamp Point**. Northern Continental Resources discovered porphyry copper-molybdenum mineralization in the Shea showing on its **LCR** property, 50 kilometres north-northwest of Terrace.

Northeast - Major Exploration Projects

Coal exploration on 8 projects in the Peace River coalfields totalled approximately $3.6 million and included approximately 13 000 metres of drilling. Western Canadian Coal Corporation and NEMI will join forces in 2005 and spend up to $20 million to explore and develop the **Saxon** and **Belcourt** coal projects near Tumbler Ridge. Both properties have had feasibility reports prepared in the past but were never developed. The mines would need approximately 100 kilometres of rail extension to connect to the existing CN line.

Kennecott Canada Exploration Pty Ltd. acquired the **Goodrich** coal property in the Pine Pass area west of Chetwynd, drilled two holes late in the season and plan to resume drilling in early 2005. Aurora Coal & Minerals Ltd. completed a modest drilling program on its **Wapiti** property, 30 kilometres north of Tumbler Ridge.

Central - Major Exploration Projects

In the Toodoggone region, Stealth Minerals and Finlay Minerals completed large drilling programs on their new epithermal gold-silver vein discoveries – **Sickle Creek** and **Pil North**, respectively. Stealth Minerals also discovered porphyry copper-molybdenum mineralization in the **Sofia** and **Alexandra** showings on its Sickle Creek property.

Alpha Gold drilled its large **Lustdust** skarn property, northwest of Fort St. James. Minterra Resources drilled its **Star** copper-platinum group elements property, northwest of Germansen Landing.

Eastfield Resources continued drilling on its large **Lorraine** copper-gold property, northwest of Fort St. James, and reported several mineralized intervals and new discoveries over a strike length of over four kilometres.

Southwest of Vanderhoof, Southern Rio Resources continued resource definition drilling of the Tommy and Ted veins on its **3Ts** gold-silver property. It also discovered the Hidden vein.

South of the Mount Polley mine, Fjordland Exploration (under a joint venture agreement with

*Photo 9. In the Toodoggone mining camp, Stealth Minerals explored a large property for precious metals and copper, including this area near Quartz Lake (**Sickle Creek**)*

Wildrose Resources) discovered potentially significant gold-copper mineralization on the Megabuck zone at the **Woodjam** property, south of Horsefly.

Skygold Resources (under an option with Wildrose Resources) drilled the sediment-hosted **Spanish Mountain** gold target near Likely.

Kootenays - Major Exploration Projects

Near Silverton, Bethlehem Resources completed an underground drilling program on its **Willa/LH** copper-gold breccia deposit. It hopes to commence mining in 2005, including trucking the ore northwards to its Goldstream mill for processing. At the **Kena** intrusion-related gold project near Nelson, Sultan Minerals completed a modest drilling program, testing newly identified structural corridors.

The **Max** porphyry molybdenum deposit, northeast of Nakusp, was drilled by Roca Mines. A follow-up underground exploration program is planned for early 2005.

Exploration spending on 6 coal projects totalled approximately $1.7 million, including some 19 700 metres of drilling. Exploration was conducted on or adjacent to the **Elkview**, **Fording River** and **Line Creek (Burnt Ridge)** mines, as well as on the **Marten-Wheeler** property 15 kilometres south of Sparwood and on the **Bingay Creek** deposit, 30 kilometres north of Elkford. On the latter, Hillsborough Resources plans to collect a bulk sample to test market conditions in 2005.

Northwest of Kimberley, Stikine Gold Corp drilled a single deep hole (more than 2700 metres) which resulted in the discovery of layered lead-zinc mineralization on its **Sullivan Deeps** project. Phase 2 of the project, which includes follow-up drilling, commenced in November. Also in the east Kootenay region, Klondike Gold drill tested several lead-zinc targets (*e.g.* **Payday**, **Panda**, **Fran**, **Davent** and **Pakk**), all in the search of another deposit like Sullivan. Klondike Gold also discovered layered lead-zinc mineralization on its **Sully** property, 20 kilometres northeast of Cranbrook.

In the Greenwood camp, Gold City Industries drilled its **Lexington** and **Golden Crown** gold-copper deposits. It plans to extract bulk samples from both properties in 2005 and process the material at its proposed new Zip mill.

Thompson-Okanagan - Major Exploration Projects

Surrounding the Afton mine, Abacus Minerals conducted a large drilling program for copper and gold on its Afton area deposits (**Rainbow**, **DM**, **Audra**). In the northern part of the Highland Valley, Getty Copper completed further drilling at its **Getty North** copper deposit and is investigating the potential use of solvent

*Photo 10. Large drill rig on the **Sullivan Deeps** property, northwest of Cranbrook.*

extraction-electrowinning on the near-surface mineralization. On its adjoining **North Valley** property to the west, Teck Cominco completed a large drilling program.

In the Revelstoke area, Orphan Boy Resources completed drilling programs on its polymetallic **Goldstream** and **Rain** properties. It also discovered vein and manto mineralization in the Alfie and Lynes showings on the Rain property. BacTech Mining completed an underground drilling program on its **J & L (McKinnon Creek)** precious metal-bearing deposit. It plans to initiate a feasibility study in 2005.

At the former **Bralorne** mine at Goldbridge, Bralorne Gold Mines processed a bulk sample from its Loco property and continued to complete mill and tailings construction. J-Pacific Gold drilled its **Elizabeth** gold property, 60 kilometres northwest of Lillooet. It also discovered a zone of porphyry copper-molybdenum mineralization.

In the Okanagan region, Almaden Minerals completed a large drilling program on its past-producing **Elk** gold-silver property west of Peachland. It plans to produce a new resource estimate, and will examine the feasibility of re-opening the mine. In the Merritt area, Almaden discovered several new epithermal gold-silver showings on its **Prospect Valley** property. Mosquito Consolidated Gold drilled its **Brett** gold property, 35 kilometres west of Vernon. A new zone of epithermal

mineralization, Bonanza East, was located sub-parallel to the Main zone. Near Okanagan Falls, Ecstall Mining continued to explore its **Vault** and **Dusty Mac** gold properties. Columbia Yukon Explorations Ltd discovered vein gold-silver mineralization on its **Barnes Creek** property, 69 kilometres southeast of Vernon.

Goldcliff Resources continued to drill its **Panorama Ridge** auriferous skarn property, adjacent to the former Hedley gold mine.

Southwest - Major Exploration Projects

North Pacific Alloys Limited continued post feasibility study work on its **Cogburn** magnesium project, near Hope. It submitted a pre-application to the Environmental Assessment Office for consideration in November. Better Resources Ltd drilled the newly discovered **Camp Lake** magnetite-copper skarn property, 25 kilometres west of Campbell River. Mainland Resources discovered VMS/skarn (?) mineralization on its **Memekay** property, 10 kilometres south of Sayward.

BRITISH COLUMBIA EXPLORATION AND MINING INITIATIVES

During 2004, the Government of British Columbia continued a number of measures to assist mineral resource planning, exploration and development, including a provincial Mining Plan.

- In early January 2005, a comprehensive mining plan for British Columbia was released outlining actions to support a thriving, globally competitive, safe and environmentally-responsible exploration and mining sectors that will significantly benefit British Columbians.
- The *British Columbia Mining Exploration Tax Credit Program*, in conjunction with the federal tax credit and the existing Canadian Exploration Expense deduction, is equivalent to a 139% tax deduction. The federal government's flow-through shares incentives program continues to be strongly supported by the provincial government to promote exploration and development of British Columbia's mineral resources.

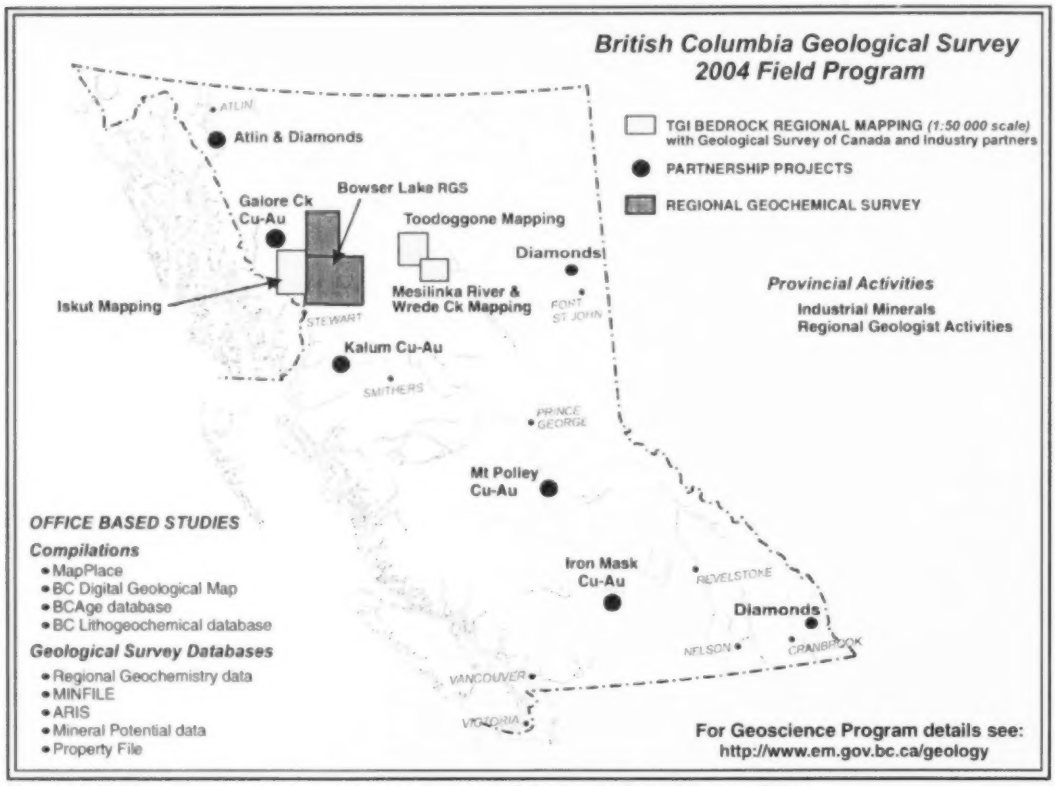

Figure 10. Field geoscience surveys carried out by the British Columbia Geological Survey – 2004.

- Mineral Titles Online, an internet-based mineral tenure system, was instituted in early January 2005.
- Geoscience surveys completed with partners in the Iskut River, Toodoggone mining camp, Terrace, Quesnel, Kamloops and several other areas (*see* Figure 10).
- A regional geochemical survey was carried out northeast of Stewart (NTS 104A) in partnership with the Geological Survey of Canada.
- Over the past year, the Ministry of Energy and Mines published 17 Open Files, 4 Geoscience Maps, 13 Geofiles, 1 Paper, 7 Information Circulars, together with *Geological Fieldwork 2003* (32 manuscripts) and *Exploration and Mining in British Columbia – 2003*.
- MapPlace, MINFILE, CoalFile and Assessment Report databases upgraded and made more accessible to clients: **www.em.gov.bc.ca/geology**.
- Staff completed marketing projects in Vancouver, Toronto, Calgary and New York to attract global mineral industry investment to British Columbia.

MINERAL EXPLORATION AND DEVELOPMENT OUTLOOK FOR 2005

The positive trends in exploration spending, drilling programs, successes at advanced exploration projects, and the number of significant property acquisitions all bode well for a very busy 2005 exploration season in British Columbia. Several companies already have raised significant funds for 2005 projects. Coal, gold and copper open-pit mining and bulk-mineable and bonanza gold targets will continue to be a focus of exploration throughout the province. Regional programs in the Nation Lakes, Toodoggone and Cariboo regions are expected to intensify.

Most metal prices are expected to continue at high values into 2005. Coal, gold, copper, molybdenum, zinc, lead and platinum will be the main commodities attracting mineral exploration attention in the province. The dramatic increase in the molybdenum price could lead to re-evaluations of 'stand alone' molybdenum projects.

The **Mount Polley** and **QR** mines are scheduled to reopen in 2005. Many advanced exploration projects have commenced a feasibility study or plan to do so in 2005 (*e.g.* **Brule**, **Perry Creek**, **Trend**, **Klappan**, **Bralorne**, **Willa/LH**, **Elk**, **Table Mountain** and **Lexington** and **Golden Crown**). Run-of-river hydro project proposals throughout the province may provide the additional infrastructure necessary to enable mine developments in remote areas (*e.g.* the Forrest Kerr hydroelectric project in the northwest). The revival of coal exploration and developments in the northeast will help revitalize the Ridley Island terminal near Prince Rupert.

The strengthening of the international coal markets is expected to continue. Production, development and exploration activities in the northeast (*e.g.* **Brule**, **Perry Creek**, **Trend, Goodrich** and **Lossan**) and southeast (**Bingay Creek** and **Lodgepole**) will continue to increase. In the northwest, the **Klappan** anthracite coal deposit is being considered for development.

The high-grade **Eskay Creek** gold-silver mine continues to attract attention, particularly in the northwest, where there is good potential for similar precious metal deposits (*e.g.* **RDN**, **Corey**, **Sib**). The advancement of the polymetallic **Tulsequah Chief** and **Kutcho Creek** deposits will continue to continue to draw attention to these deposit types elsewhere in the province. With the strong zinc and lead prices, the search for Sullivan-type deposits in the southeast corner of British Columbia is expected to intensify.

Industrial minerals production continues to grow steadily through developing additional markets and mining more commodities. In 2005, it is anticipated that industrial clays, limestone and aggregate sales will improve. Sulphur sales are expected to be particularly strong again.

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